

**REMARKS**

No new matter is believed to be added to the application by this Amendment.

**Status of the Claims**

Upon entry of this Amendment, claims 1, 3, 5, 7, 9, 11, 13, 15, 17, 19-32, 37-46 and 52-57 are pending in the application. Claims 47-51 are canceled by this Amendment. Claims 19-32 and 37-40 have been withdrawn from consideration by the Examiner. The amendments to claims 1 and 52 find support at page 16 of the specification and in Figure 1 of the application.

**Interview with the Examiners**

Applicants thank the Examiners for graciously conducting an Interview with Applicants' representative on October 31, 2002. The Interview Summary has been reviewed and it appears to accurately reflect the content of the Interview. It is additionally noted that during the Interview the Examiners made of record the prior art of Shacklette (U.S. Patent No. 5,850,498). As a result, the Examiners have performed further consideration and/or search and the status of the application is properly considered to be under non-final rejection.

**Rejections Based Upon Imoto**

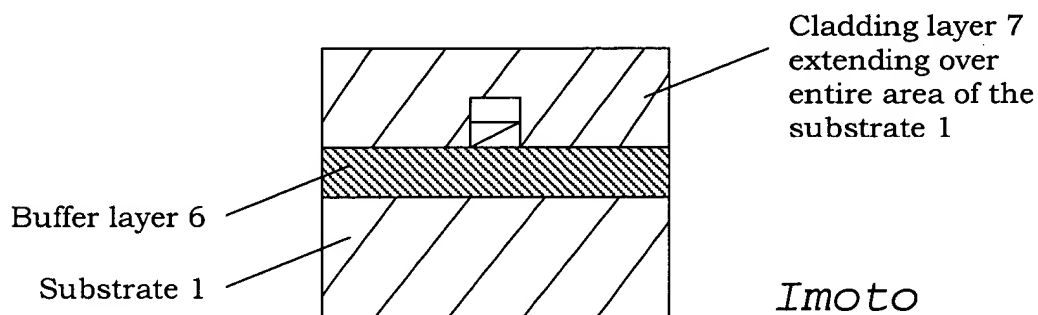
Claims 1, 3, 7, 9, 11, 47-51 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Imoto (U.S. Patent No. 5,497,445). Claims 55 and 56 are rejected under 35 U.S.C. 103(a) as being obvious over Imoto. Claims 52-54 are

rejected under 35 U.S.C. 103(a) as being obvious over Imoto in view of Tabuchi (U.S. Patent No. 6,112,002). Claim 5 is rejected under 35 U.S.C. 103(a) as being obvious over Imoto in view of Thomas (U.S. Patent No. 5,235,663). Claims 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being obvious over Imoto in view of Maruo (U.S. Patent No. 5,572,619). Applicants traverse.

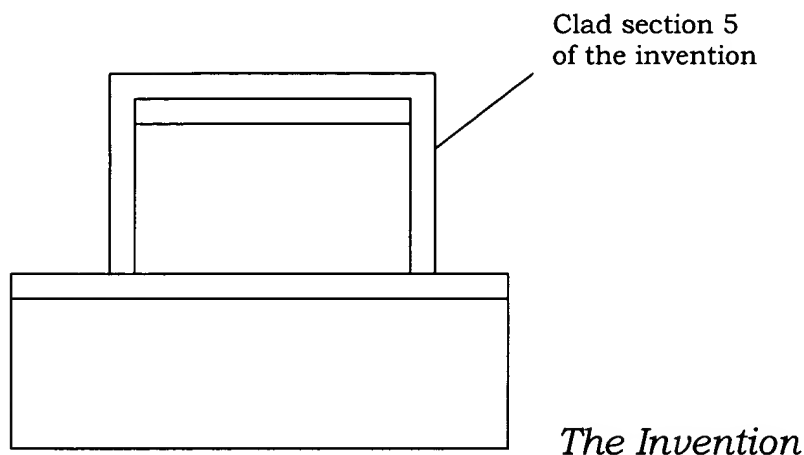
Distinctions of the invention over the cited art are of record in the application.

An important aspect of the invention resides in the feature "the inorganic dielectric consisting essentially of silicon dioxide," such as set forth in independent claims 1 and 52. In contrast, Imoto uses  $\text{SiO}_x\text{N}_y\text{H}_z$  as a dielectric, which the Examiner asserts encompasses  $\text{SiO}_2$ . However, the specific advantages of using  $\text{SiO}_x\text{N}_y\text{H}_z$  are discussed at column 3, lines 15-44 of Imoto, and these advantages include manipulating the amount of N to vary the refractive index combined with the ability to apply this material using low temperature CVD. In comparison, the invention is essentially restricted to  $\text{SiO}_2$  and therefore cannot vary the refractive index.

Further, the cladding layer 7 of Imoto is a continuous layer that covers the entire area of the buffer layer 6 and the Si substrate 1.



In contrast, the invention has a closely conforming overclad 5 that has a thickness of several microns (claim 55) or about 2 microns (claim 56).



The disadvantages of a conventional overclad such as in Imoto are shown in Figure 5 of the application and discussed at page 5 of the specification. This conventional overclad requires additional processing and is difficult to integrate with other optical components on the same substrate. In contrast, in the invention “the clad section has substantially the same shape and closely conforms to the core section.” See claims 1 and 52.

As a result, the technology of the invention is fundamentally different from that of Imoto. Therefore, Imoto fails to anticipate the claimed invention. Also, a person having ordinary skill in the art would not be motivated to use any of the teachings of Imoto to produce a claimed embodiment of the invention. Thus, a *prima facie* case of obviousness has not been made over Imoto or Imoto combined with any of the secondary references of Tabuchi, Thomas, or Maruo. Accordingly, these rejections are overcome and withdrawal thereof is respectfully requested.

**Conclusion**

The Examiner is respectfully requested to enter this Response After Final in that it raises no new issues. Alternatively, the Examiner is respectfully requested to enter this Response After Final in that it places the application in better form for Appeal.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Ph.D. (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


**Attached hereto is a marked-up version of the changes made to the application by this Amendment.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.


Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made



**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Claims 47-51 have been canceled.

The claims have been amended as follows:

1. (Four Times Amended) An organic waveguide comprising:

a substrate;

a buffer layer over the substrate;

a core section over the buffer layer, the core section being made of organic polymer; and

a clad section covering an upper surface of the core section and made of inorganic dielectric having a lower refractive index than that of the core section, the inorganic dielectric consisting essentially of silicon oxide, and the clad section has substantially the same shape [as the] and closely conforms to the core section.

52. (Twice Amended) An optical part, which comprises:

an organic waveguide; and

an optical element selected from the group consisting of a photo-emitting element, a photo-receptive element and a lens, wherein the organic waveguide and the optical element are formed on a single substrate,

and the organic waveguide comprises:

a buffer layer over the substrate;

a core section over the buffer layer, the core section being made of organic polymer; and

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a clad section covering an upper surface of the core section and made of an inorganic dielectric having a lower refractive index than that of the core section, the inorganic dielectric consisting essentially of silicon oxide, and the clad section has substantially the same shape [as the] and closely conforms to the core section.